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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/640,623	08/12/2003	Jeffrey Rees	10017138-1	1135

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EXAMINER	
NAHAR, QAMRUN	
ART UNIT	PAPER NUMBER
2191	

NOTIFICATION DATE	DELIVERY MODE
07/23/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/640,623	REES ET AL.	
	Examiner	Art Unit	
	QAMRUN NAHAR	2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 April 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-9,11-15 and 22-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-9,11-15 and 22-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the amendment filed on 04/16/2008.

2. The rejection under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention to claims 1 and 3-15 is withdrawn in view of applicant's amendment.

3. Claims 1, 3-9 and 11-15 have been amended.

4. Claims 22-29 have been added.

5. Claim 10 has been canceled.

6. Claims 1, 3-9, 11-15 and 22-29 are pending.

Response to Amendment

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1, 3-9, 11-15 and 22-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oulu (U.S. 6,792,460) in view of Boykin (US 2004/0153996), and further in view of Johnson, Mark "The Application Response Measurement (ARM) API, Version 2)", 1997 (Art of Record, hereinafter "Johnson").

Per Claim 1:

Oulu teaches operating on a bytecode representation of function to be instrumented by inserting an instrumentation code in the bytecode representation of the function without modifying respective source code of the function ("... instrumentation occurs as follows. The virtual machine 600 obtains a class source 602 from a storage device 604, such a disk drive, at run time. An example of ***a class source is bytecode***, a compiled format for Java™ programs. Prior to executing the class source 602, the virtual machine 600 ***passes the class source 602 to a "code instrumentation" component 610*** of the probe 122. ... To ***instrument the class source***, all of its methods are typically instrumented individually, so that each such method may be separately monitored. ... " (emphasis added) in column 12, lines 26-38; the class source 602 is bytecode; The bytecode is instrumented, without modifying a respective source code of the class source 602.) and while classes of the function are being loaded for execution ("... the task of monitoring the application components 104 and methods 124 is accomplished using a virtual machine configured to pass the invoked components (classes) to the probe 122 at ***load time*** for dynamic instrumentation. ..." (emphasis added) in column 11, lines 27-31) to effect generation of a start time marker upon start of execution of said method or function ("The probe 122 preferably instruments (adds hooks to) a monitored class by instrumenting some or all of the methods 124 within that class. As described below, a particular method is instrumented by adding a "start" call at the beginning of the method ..." in column 11, lines 52-57) and a stop time marker upon completion of execution of said method or function ("...and an "end" call at the end of the method." in column 11, lines 52-57); and utilizing the start and stop time markers to determine a response time of the function ("These calls or "hooks" allow the probe to determine whether a particular invocation of an instrumented method corresponds to a

transaction that is colored for monitoring, and if it is, to record the start and stop time of that method. The start and stop times of some or all of the methods invoked by this transaction can thus be recorded. These measurements can then be aggregated at the component level to determine the amount of time spend by each component." in column 11, lines 57-65).

Oulu does not explicitly teach incorporating instrumentation hooks into the bytecode representation prior to loading and initialization of a class containing the function by a virtual machine or generating a call to an Application Response Measurement (ARM) agent to cause the ARM agent to effect generation of a start time marker upon start of execution of the function and a stop time marker upon completion of execution of the function, wherein the ARM agent is one of a plurality of agents of an ARM protocol.

Boykin teaches incorporating instrumentation hooks into the bytecode representation prior to loading and initialization of a class containing the function by a virtual machine ("…Therefore, instrumentation code is inserted into the "defineClass" methods of "java.lang.ClassLoader"; the instrumentation code allows all class definition events to be examined prior to the invocation of the JVMPI class load hook by the JVM …" in par. 0047).

It would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the method disclosed by Oulu to include incorporating instrumentation hooks into the bytecode representation prior to loading and initialization of a class containing the function by a virtual machine using the teaching of Boykin. The modification would be obvious because one of ordinary skill in the art would be motivated to determine the Java class as it is being defined by the JVM for use by operations invoked through the class load hook (Boykin, par. 0007).

Johnson teaches generating a call to an Application Response Measurement (ARM) agent to cause the ARM agent to effect generation of a start time marker upon start of execution of the function (pg. 3, 2nd column, "How to Use the API", step 2; and pg. 4, 2nd column, "arm_start") and a stop time marker upon completion of execution of the function (pg. 3, 2nd column, "How to Use the API", step 2; and pg. 4, 2nd column, "arm_stop"), wherein the ARM agent is one of a plurality of agents of an ARM protocol (pg. 2, Figure 1. Overview of the ARM API).

It would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the method disclosed by Oulu to include generating a call to an Application Response Measurement (ARM) agent to cause the ARM agent to effect generation of a start time marker upon start of execution of said method or function and a stop time marker upon completion of execution of said method or function, wherein the ARM agent is one of a plurality of agents of an ARM protocol using the teaching of Johnson. The modification would be obvious because one of ordinary skill in the art would be motivated to ascertain if the method or function has hung or failed (Johnson, pg. 2, 1st column, "What is the response time?").

Per Claim 3:

The rejection of claim 1 is incorporated, and Johnson further teaches registering the function with the ARM agent prior to generation of the start and stop time markers (pg. 4, 1st column, "arm_init").

Per Claim 4:

The rejection of claim 1 is incorporated, and Oulu further teaches wherein the instrumentation code causes generation of the start and stop time markers without modifying instructions associated with execution of the function (column 12, lines 26-38 and column 13, lines 34-39).

Per Claim 5:

The rejection of claim 1 is incorporated, and Johnson further teaches wherein the ARM agent generates a record corresponding to the function for storing the response time associated with the function (pg. 2, 1st column, "How can the application or environment be tuned to perform better").

Per Claim 6:

The rejection of claim 5 is incorporated, and Johnson further teaches wherein the record includes a field for identifying a parent, if any, of the function in a hierarchical parent-child transaction chain (pg. 2, 1st column, "How can the application or environment be tuned to perform better").

Per Claim 7:

The rejection of claim 6 is incorporated, and Johnson further teaches wherein the record includes another field for identifying a top level transaction in the parent-child transaction chain (pg. 2, 1st column, "How can the application or environment be tuned to perform better").

Per Claim 8:

The rejection of claim 1 is incorporated, and Oulu further teaches wherein the software component includes at least one of the following: a server page, a servlet of a server side component, a driver, a naming and directory interface (NDI) or remote method invocation (RMI) component ("… servlet …" in column 1, line 54).

Per Claim 9:

The rejection of claim 8 is incorporated, and Oulu further teaches wherein the function of the software component includes at least one of the following: a service method of a server page, a doFilter, a doGet, a doPost or a service method of a servlet, a getConnection, executeQuery, or selected methods of driver, or remote, local or home interface methods of a server side component ("… servlet …" in column 1, lines 53-67).

Per Claim 11:

The rejection of claim 1 is incorporated, and Oulu further teaches storing the response time in a database ("… reports server …" in column 1, lines 48-52).

Per Claim 12:

The rejection of claim 1 is incorporated, and Oulu further teaches displaying the response time to a user (column 1, lines 64-67 and column 6, lines 39-49).

Per Claim 13:

This is a system version of the claimed method discussed above (claims 1, 11 and 12), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, this claim is also obvious.

Per Claim 14:

The rejection of claim 13 is incorporated, and Boykin further teaches wherein the instrumentation engine inserts the instrumentation code prior to loading of a class containing the function by a virtual machine (par. 0047).

Per Claim 15:

The rejection of claim 13 is incorporated, and Oulu further teaches wherein the instrumentation engine inserts the instrumentation code in the bytecode representation without modifying instructions associated with execution of the function (column 12, lines 26-38 and column 13, lines 34-39).

Per Claims 22-29:

These are system versions of the claimed method discussed above (claims 1 and 3-9, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Response to Arguments

9. Applicant's arguments with respect to claims 1, 3-9, 11-15 and 22-29 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication from the examiner should be directed to Qamrun Nahar whose telephone number is (571) 272-3730. The examiner can normally be reached on Mondays through Thursdays from 9:00 AM to 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Y Zhen, can be reached on (571) 272-3708. The fax phone number for the organization where this application or processing is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Qamrun Nahar/
Qamrun Nahar
July 21, 2008

/Ted T. Vo/
Primary Examiner, Art Unit 2191